Root Worksheet Template 102

On "Submit"

Worksheet Template A 104

Worksheet Template B 106

On "Submit"

On "Submit"

Worksheet Record C 108

Worksheet Record D 110

Worksheet Record E 112

On "Submit"

Clinical Elements Maintained in Patient Shell

VHS

Data Platform

100

FIG. 1

200

ENROLLED PATIENTS

| Worksheet Templates | → On "Submit" | Worksheet Records |

Clinical Elements Maintained on Health Profile 110

Implicit "Assemble"

Service Requests

Implicit "Update"

CASE MANAGERS 204

| Worksheet Templates | On "Submit" | Worksheet Records |

100

Clinical Artifacts 202

Explicit "Create"

On "Submit"

REFERRING PHYSICIANS 206
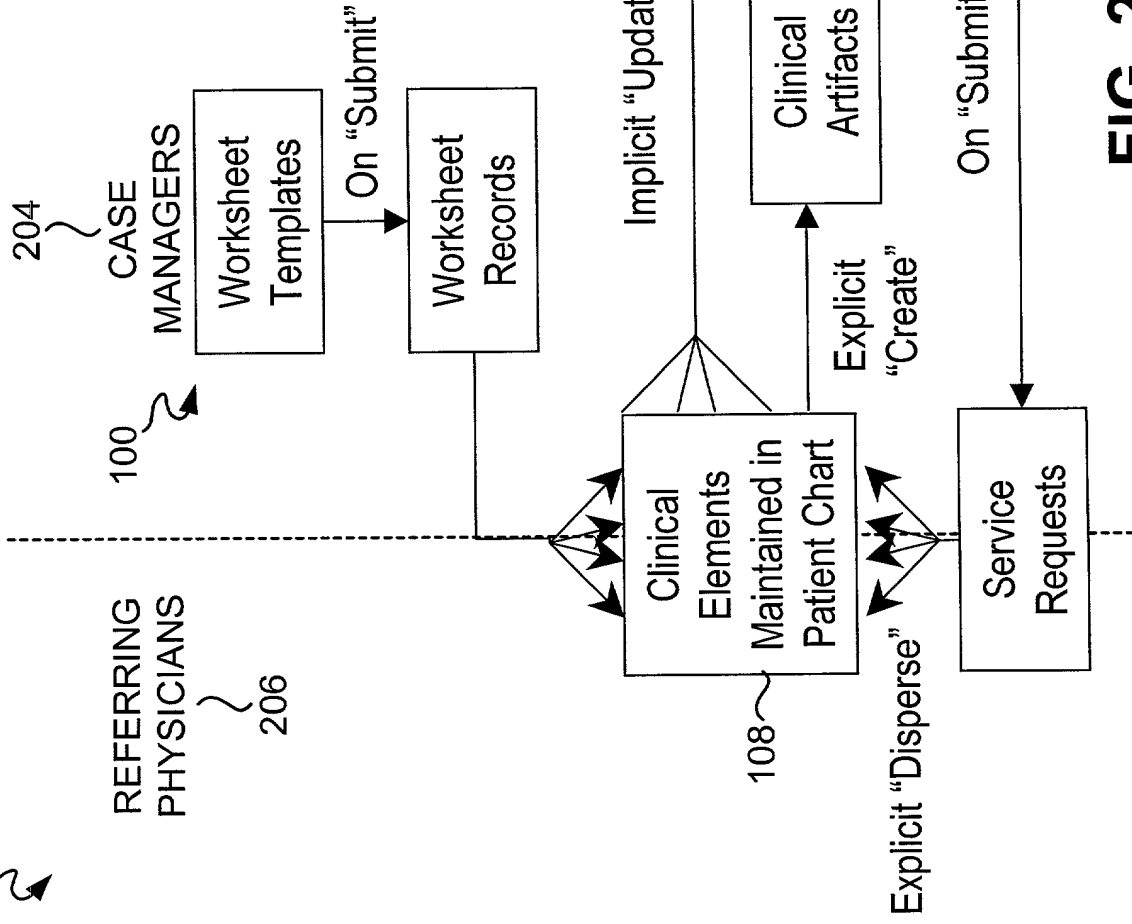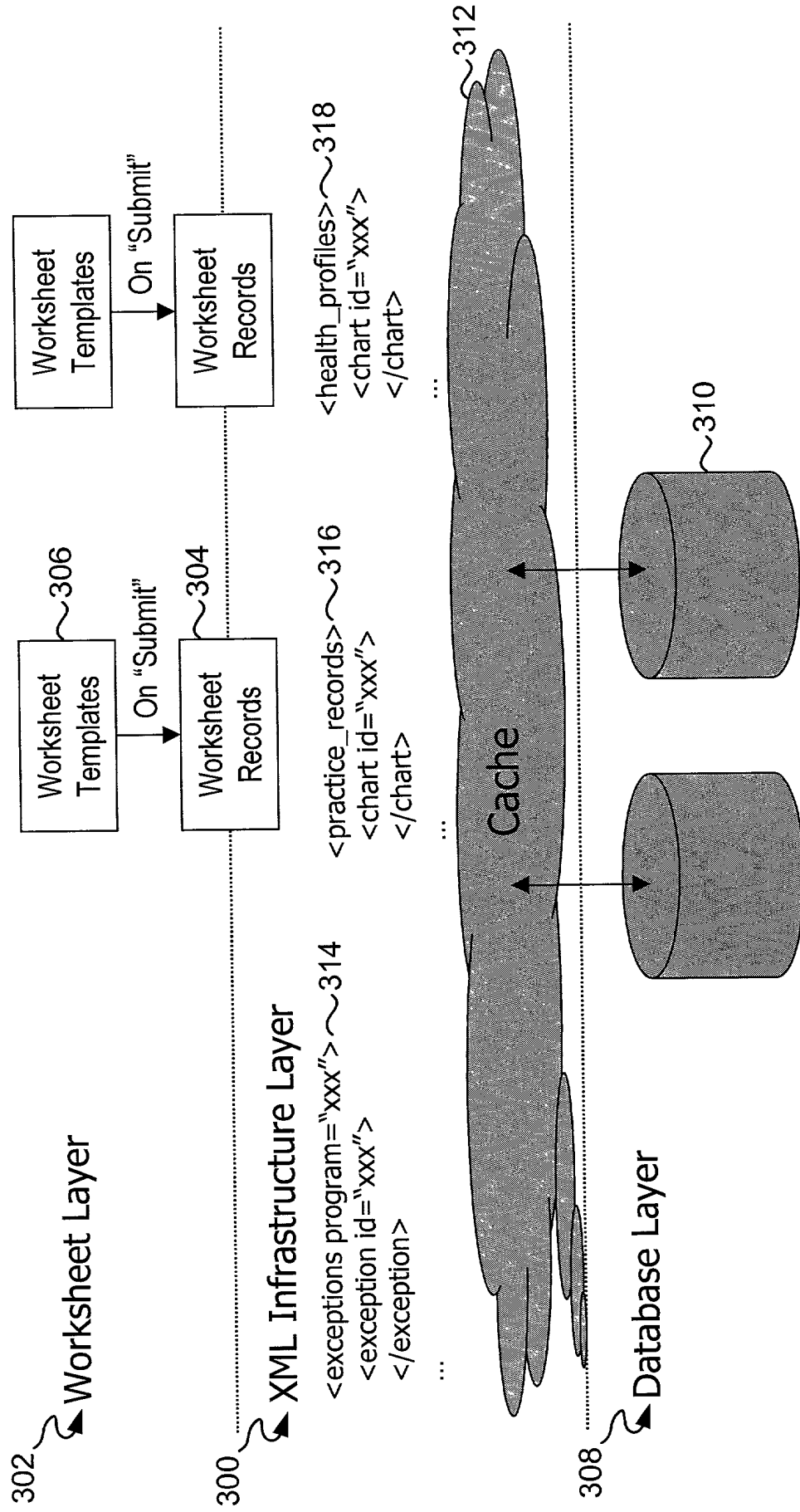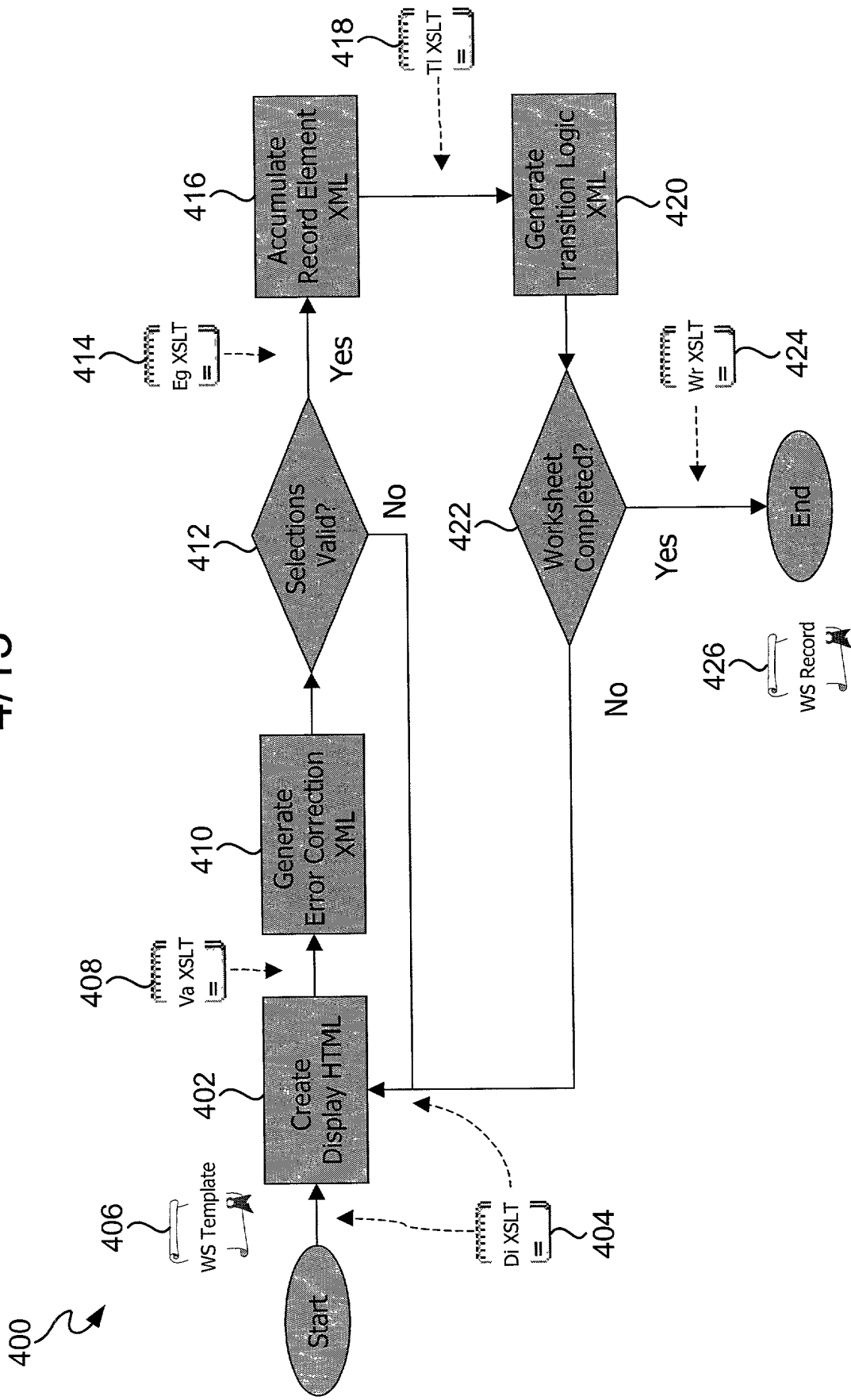
Clinical Elements Maintained in Patient Chart 108

Service Requests

Explicit "Disperse"

FIG. 2

302 ➤ Worksheet Layer

300 ➤ XML Infrastructure Layer

308 ➤ Database Layer

306 — Worksheet Templates → On "Submit" → Worksheet Records — 304

Worksheet Templates → On "Submit" → Worksheet Records

```
<exceptions program="xxx"> ~314
<exception id="xxx">
</exception>
...
```

```
<practice_records> ~316
<chart id="xxx">
</chart>
...
```

```
<health_profiles> ~318
<chart id="xxx">
</chart>
...
```

Cache ~312

310

FIG. 3

Start

406 WS Template

404 Di XSLT

402 Create Display HTML

408 Va XSLT

410 Generate Error Correction XML

412 Selections Valid?

No

Yes

414 Eg XSLT

416 Accumulate Record Element XML

418 TI XSLT

420 Generate Transition Logic XML

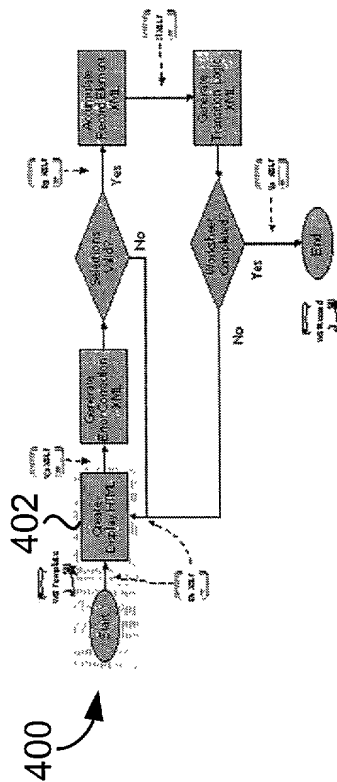422 Worksheet Completed?

No

Yes

424 Wr XSLT

426 WS Record

End

400

FIG. 4

400

402

406

500

This section prompts for at least 3 clinical elements. Please select one observation, then at least two from problem, medOrder or reminder:

504

⌐ Blood pressure (mmHg sbp/dbp): 100   /80

⌐ Hypertension, essential

⌐ Tenormin (atenolol) 50 mg tabs,
Take as directed.

100 , Refills. No refills
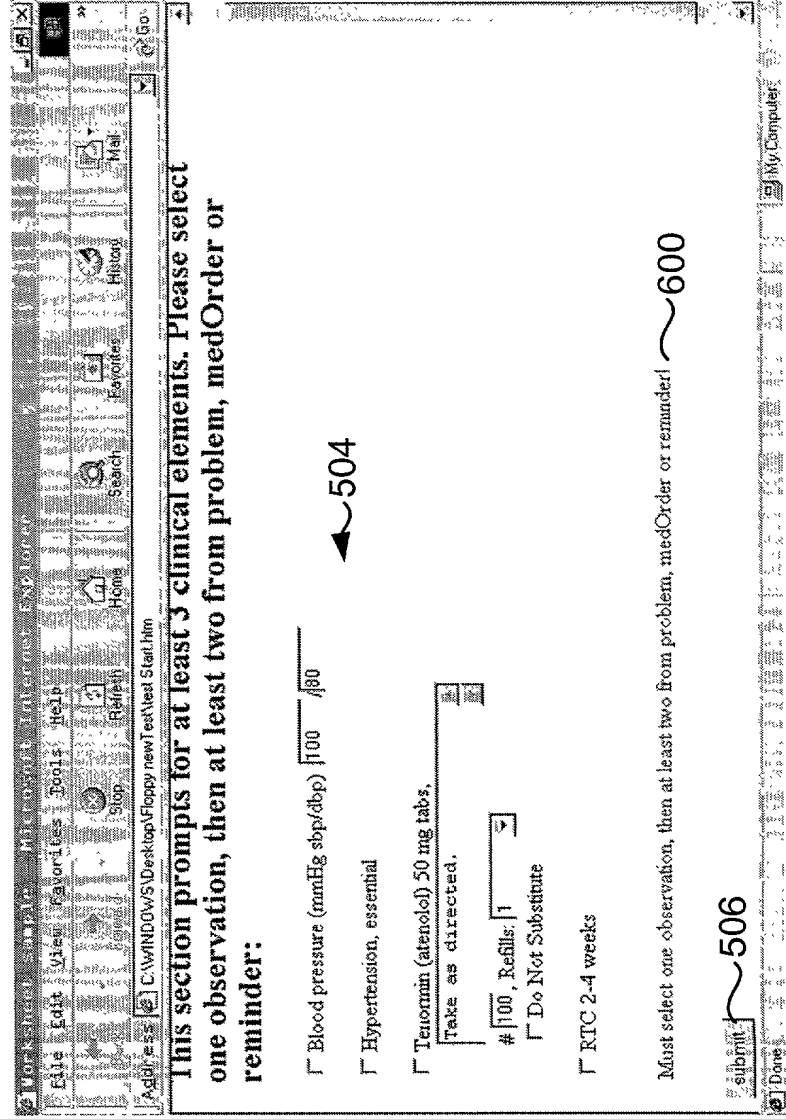
⌐ Do Not Substitute

⌐ RTC 2-4 weeks

506

submit

502
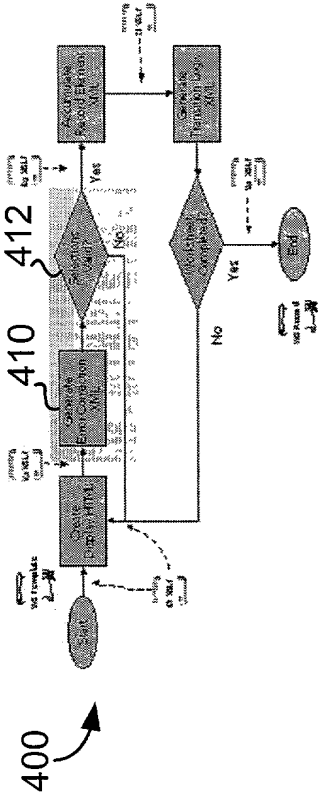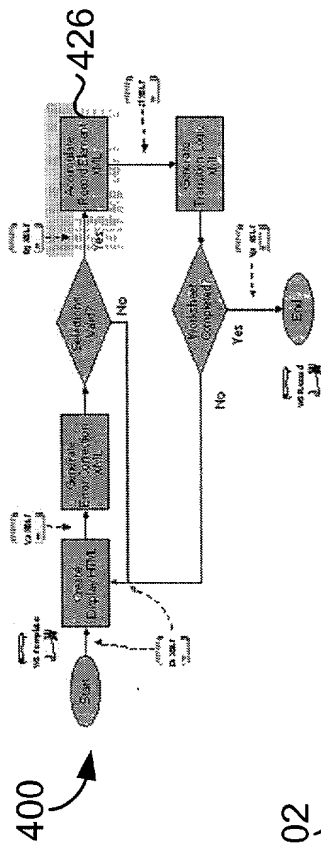
File Edit View Favorites Tools Help

Home   Refresh   Stop   Search   Favorites   History   Mail

My Computer

Done

FIG. 5

400

410 412

406

500

This section prompts for at least 3 clinical elements. Please select one observation, then at least two from problem, medOrder or reminder: ~504

- ☐ Blood pressure (mmHg sbp/dbp) |100 /80

- ☐ Hypertension, essential

- ☐ Tenormin (atenolol) 50 mg tabs.
  Take as directed.
  # |100 , Refills: |1
  ☐ Do Not Substitute

- ☐ RTC 2-4 weeks

Must select one observation, then at least two from problem, medOrder or reminder! ~600

~506

submit

~602

FIG. 6

FIG. 7

```
<section id="s001">
<title>First Section</title>
<description>This section prompts for at least two from problem, medOrder or reminder.
then at least two from problem, medOrder or reminder </description>
<cec id="c001" type="observation" sel="yes">
  <label tgt="description">Blood pressure (mmHg sbp/dbp) </label>
  <m id="m002" type="textbox" size="5" tgt="description">100</m>
  <label tgt="description">/</label>
  <m id="m004" type="textbox" size="5" tgt="description">80</m>
  <code id="cd001" type="VHSI/PEX/VS">SBP</code>
  <code id="cd002" type="VHSI/PEX/VS">DBP</code>
  <msg id="cm002" type="compareNumber" display="no">SBP must be a number between the DBP and 300</msg>
  <msg id="cm001" type="compareNumber" display="no">DBP must be a number between 50 and 200</msg>
</cec>
<cec id="c002" type="problem" sel="yes">
  <label tgt="description">Hypertension, essential</label>
  <code id="cd003" type="ICD9-CM">4019</code>
</cec>
<cec id="c003" type="medOrder" sel="yes">
  <label tgt="medBrand">Tenormin</label>
  <label tgt="medName">atenolol</label>
  <label tgt="strForm">50 mg tabs</label>
  <m id="m009" type="textarea" rows="2" cols="30" tgt="sig">Take as directed </m>
  <m id="m010" type="textbox" size="2" tgt="quantity">100</m>
  <m id="m011" type="pulldown" size="1" tgt="numRefills">
    <option sel="no">1</option>
    <option sel="no">2</option>
    <option sel="no">3</option>
    <option default="yes" sel="yes">No refills</option>
  </m>
  <m id="m012" type="checkbox" tgt="subGeneric" sel="no">Do Not Substitute</m>
  <code id="cd004" type="MEDISPAN/GPI">66034589 2</code>
  <msg id="cm004" type="compareNumber" display="no">Quantity must be between 1 and 1000</msg>
</cec>
<cec id="c004" type="reminder" sel="no">
  <label>RTC 2-4 weeks</label>
  <hidden tgt="startDT">Today+2 weeks</hidden>
  <hidden tgt="endDT">Today+4 weeks</hidden>
  <hidden tgt="msgText">Patient overdue for clinic appointment </hidden>
</cec>
<msg id="fm001" type="formCount" display="no">Must select one observation, then at least two from problem,
medOrder or reminder</msg>
</section>
```

400

420

800

```
<parameters next="3" display="s003,s004" />
```

(Transition logic XML exists only
temporarily-- until javascript
extracts the 'next' and 'display'
parameters)

406

```
<worksheet id="w001">
<section id="s001">
<title>First Section</title>
<description>This section prompts for at least 3 clinical elements  Please select one observation,
then at least two from problem, medOrder or reminder </description>
<cec id="c001" type="observation" sel="yes">
<label tgt="description">Blood pressure (mmHg sbp/dbp)  </label>
<m id="m002" type="textbox" size="5" tgt="description">100</m>
<label tgt="description"></label>
<m id="m004" type="textbox" size="5" tgt="description">80</m>
<code id="cd001" type="VHSI/PEX/VS">SBP</code>
<code id="cd002" type="VHSI/PEX/VS">DBP</code>
<msg id="cm002" type="compareNumber" display="no">SBP must be a number between the DBP and 300</msg>
<msg id="cm001" type="compareNumber" display="no">DBP must be a number between 50 and 200</msg>
</cec>
<cec id="c002" type="problem" sel="yes">
<label tgt="description">Hypertension, essential</label>
<code id="cd003" type="ICD9-CM">401 9</code>
</cec>
<cec id="c003" type="medOrder" sel="yes">
<label tgt="medBrand">Tenormin</label>
<label tgt="medName">atenolol</label>
<label tgt="strForm">50 mg tabs</label>
<m id="m009" type="textarea" rows="2" cols="30" tgt="sig">Take as directed </m>
<m id="m010" type="textbox" size="2" tgt="quantity">100</m>
<m id="m011" type="pulldown" size="1" tgt="numRefills">
<option sel="no">1</option>
<option sel="no">2</option>
<option sel="no">3</option>
<option default="yes" sel="yes">No refills</option>
</m>
<m id="m012" type="checkbox" tgt="subGeneric" sel="no">Do Not Substitute</m>
<code id="cd004" type="MEDISPAN/GPI">660345892</code>
<msg id="cm004" type="compareNumber" display="no">Quantity must be between 1 and 1000</msg>
</cec>
<cec id="c004" type="reminder" sel="no">
<label>RTC 2-4 weeks</label>
<hidden tgt="startDT">Today+2 weeks</hidden>
<hidden tgt="endDT">Today+4 weeks</hidden>
<hidden tgt="msgText">Patient overdue for clinic appointment </hidden>
</cec>
<msg id="sm001" type="formCount" display="no">Must select one observation, then at least two from problem,
medOrder or reminder1</msg>
</section>
</worksheet>
```
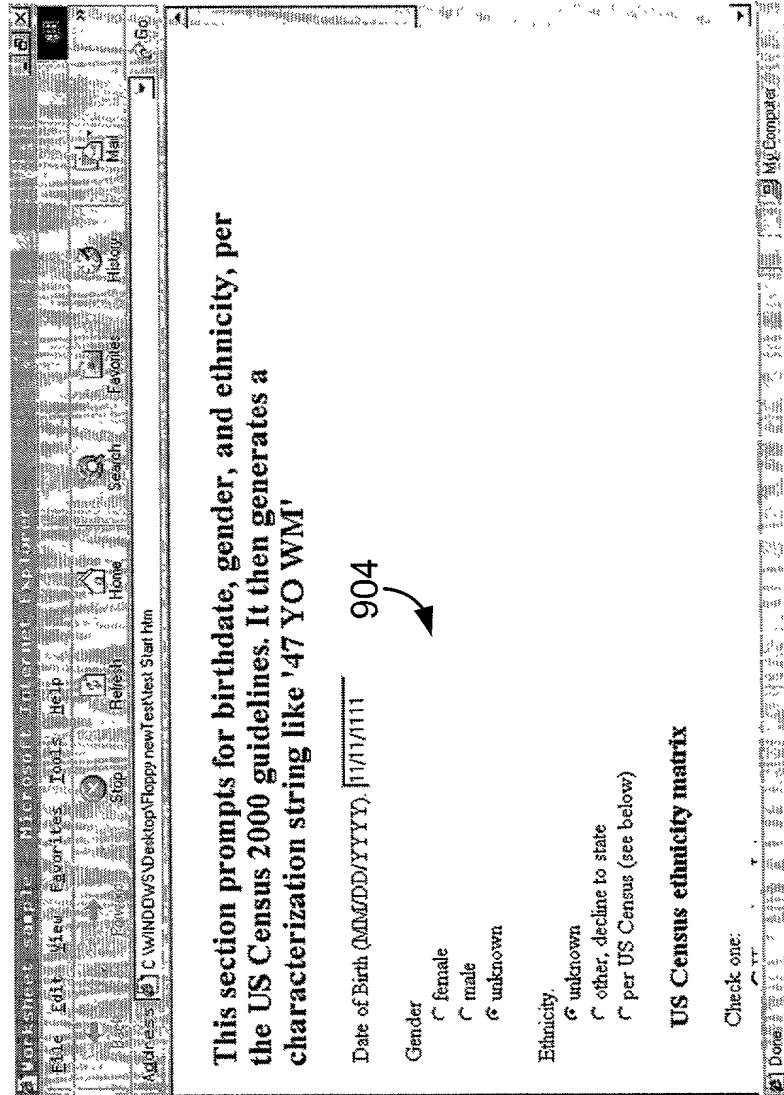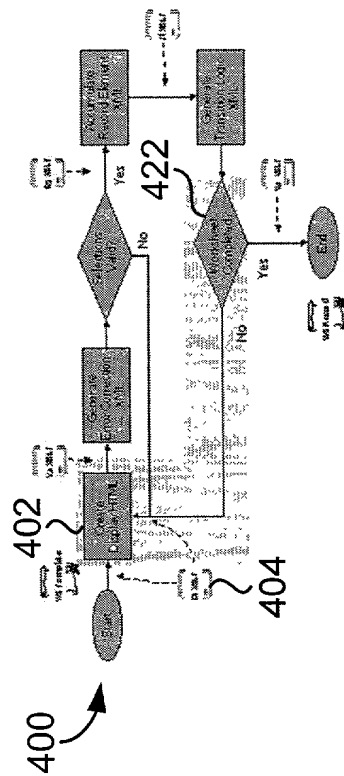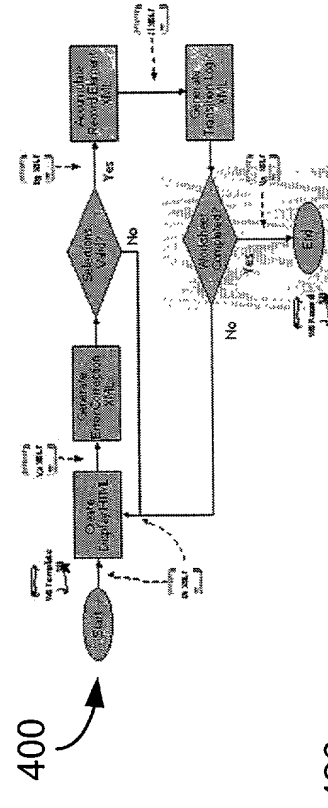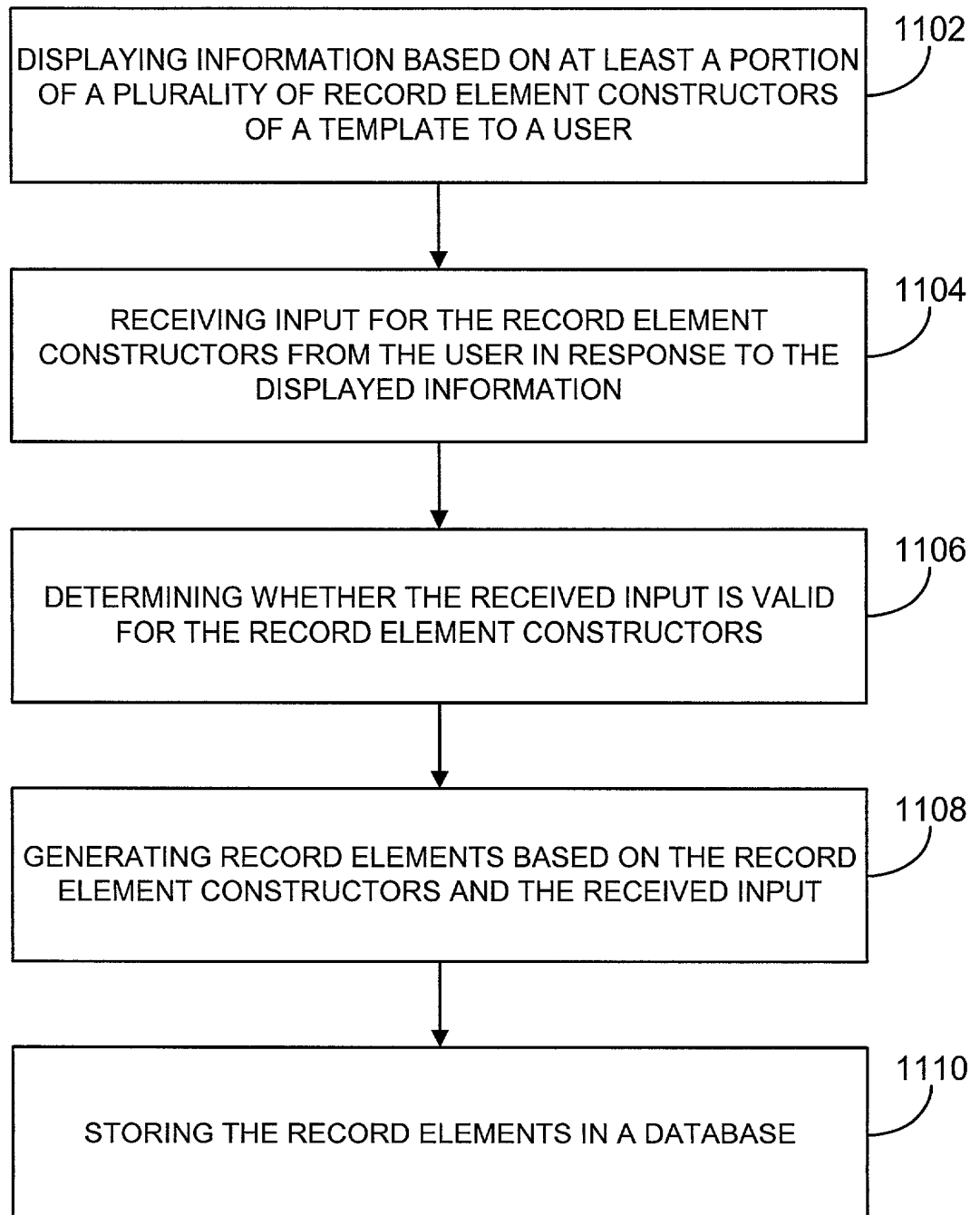
FIG. 8

This section prompts for birthdate, gender, and ethnicity, per the US Census 2000 guidelines. It then generates a characterization string like '47 YO WM'

Date of Birth (MM/DD/YYYY): 11/11/1111

Gender
○ female
○ male
◉ unknown

Ethnicity:
◉ unknown
○ other, decline to state
○ per US Census (see below)

US Census ethnicity matrix

Check one:

FIG. 9

```
<worksheetRecord id="wsRec001">
    <ce id="obs333001" type="obs" createDT="2000-04-11">
        <label value="100/80">Blood pressure</label>
    </ce>
    <ce id="obs333002" type="prob" createDT="2000-04-11">
        <label>Hypertension, essential</label>
        <code id="cd333002prob" type="ICD">401.9</code>
    </ce>
    <ce id="med333001" type="medOrder" createDT="2000-04-11">
        <requestor refid="p0003"/>
        <medBrand generic="yes">Tenormin</medBrand>
        <medName>atenolol</medName>
        <strForm>50 mg tabs</strForm>
        <sig>Take as directed.</sig>
        <qty>100</qty>
        <refills>No refills</refills>
        <code id="cd333001med" type="Medispan/GPI">660345892</code>
    </ce>
    <ce id="obs333003" type="obs" createDT="2000-04-11">
        <label value="11/11/1111">Date of Birth</label>
    </ce>
    <ce id="obs333004" type="obs" createDT="2000-04-11">
        <label value="unknown">Gender</label>
    </ce>
    <ce id="obs333005" type="obs" createDT="2000-04-11">
        <label value="unknown">Ethnicity</label>
    </ce>
</worksheetRecord>
```
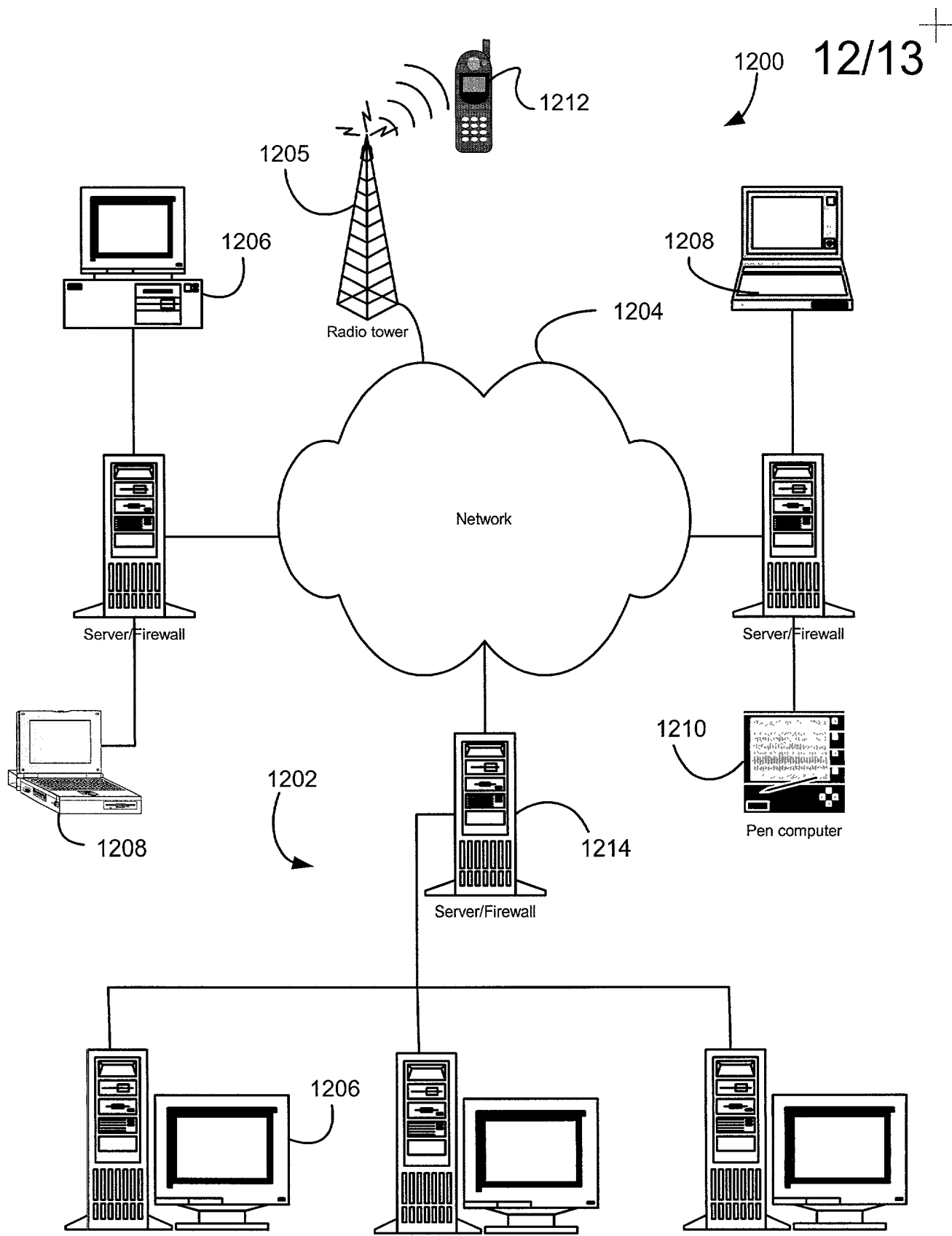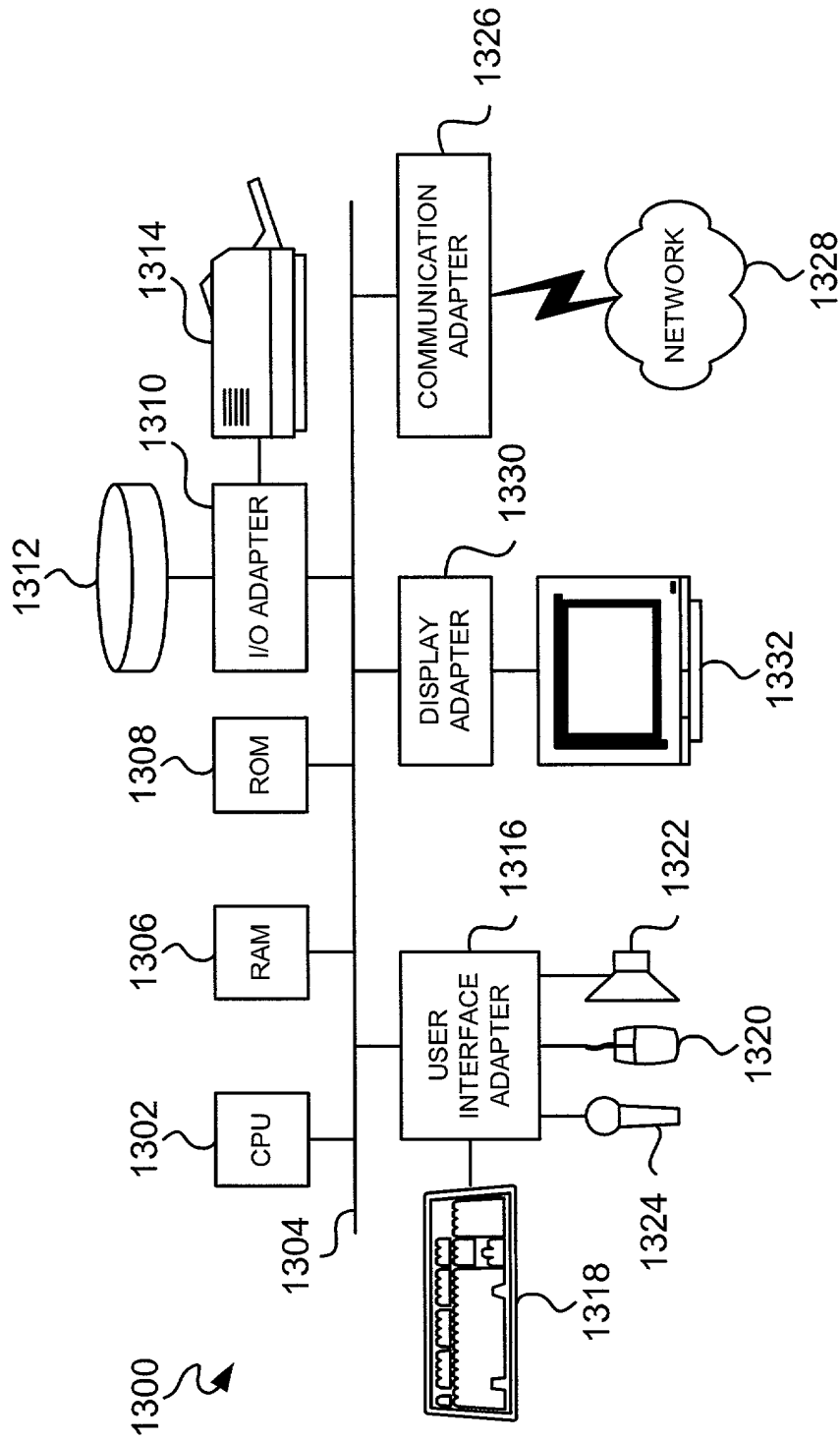
426

400

FIG. 10

1100

DISPLAYING INFORMATION BASED ON AT LEAST A PORTION OF A PLURALITY OF RECORD ELEMENT CONSTRUCTORS OF A TEMPLATE TO A USER — 1102

RECEIVING INPUT FOR THE RECORD ELEMENT CONSTRUCTORS FROM THE USER IN RESPONSE TO THE DISPLAYED INFORMATION — 1104

DETERMINING WHETHER THE RECEIVED INPUT IS VALID FOR THE RECORD ELEMENT CONSTRUCTORS — 1106

GENERATING RECORD ELEMENTS BASED ON THE RECORD ELEMENT CONSTRUCTORS AND THE RECEIVED INPUT — 1108

STORING THE RECORD ELEMENTS IN A DATABASE — 1110

FIG. 11

1200

1212

1205

Radio tower

1206

1208

1204

Network

1202

1208

Server/Firewall

Server/Firewall

1210

Pen computer

1214

Server/Firewall

1206

FIG. 12

FIG. 13